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had acquired the same habit, but confined exclusively to the so-called "parlor" or "popping" matches. I never knew how he acquired the habit—perhaps accidentally, by striking them with the beak or beating them against some hard substance as he did much of his food.

When given a match he always hopped to a chair-round and struck it almost directly downward, fulminate "end on," and if it did not explode at once his blows were repeated rapidly until it ignited. He would then drop it, spring away and watch it wonderingly while it burned. All matches about the house had to be kept from him. He knew them by their odor, and would tear open packages to get them out. On one occasion his mistress came in and found him with a box from which he had ignited nearly three dozen.

—James Newton Baskett.

Mexico, Mo.

ANTHROPOLOGY.[1]

Professor Holmes Studies of Aboriginal Archictecture in Yucatan.—Professor W. H. Holmes in his recent visit to the Islands on the east coast of Yucatan, the sites of Chichen Itza, Izamal and Uxmal and certain shell heaps, near Progreso (See Archeological Studies among the ancient cities of Mexico, by W. H. Holmes. Field Columbian Museum Publication 8. Chicago 1895) has presented us with a valuable and characteristically clear summary of the important architectural features of the Peninsular ruins.

Eschewing archaeological investigation in such directions as those of implements, pottery, metals, art, food, burial, etc., he fixes our attention upon the stones used in building, the manner of dressing and laying them and the purpose of completed structures. The details of this subject casually referred to by Charnay and Waldeck and in the unindexed pages of Stephens, are summed up to together with certain original observations and arranged in order, until we see the relationship, in purpose that characterizes the ruined structures in the region. No demonstration has yet been made as to the kind of tools used in carving the limestone of the facades and Professor Holmes like all previous travellers, leaves the question unanswered. Neither does he refer to Mr. McGuires' theory that the work was done with round hammerstones. But a block fortunately found at Chichen Itza, pecked on the surface with a pointed instrument and lined off for edge dressing with a flat edged tool, is shown as an interesting illustration (Fig. 1) of the effect on stone of the kind of tool we are hunting for. Until we find the implement, however, we may believe on early Spanish authority, that hard copper was used, or imagine adzes and chisels of stone as we please, while we recognize with Professor Holmes the importance of ransacking the sites of quarries, where the innumerable blocks (20,000 carved on the facade of the "Governors House", at Uxmal alone) were procured.[2] Happily chosen general observations give a clearness to the whole presentation, and the delightful yet confused and complex impression of the ruins left upon the mind by the accounts of travelers becomes simple in the colder light of Professor Holmes systematic observations. The reader continually thanks him as he would thank the compiler of an index to a work of many volumes. Such characteristic general features as the ignorance of a master principle of mason craft like joint binding, the feeble grasp of the

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[1] This department is edited by H. C. Mercer, University of Pennsylvania.

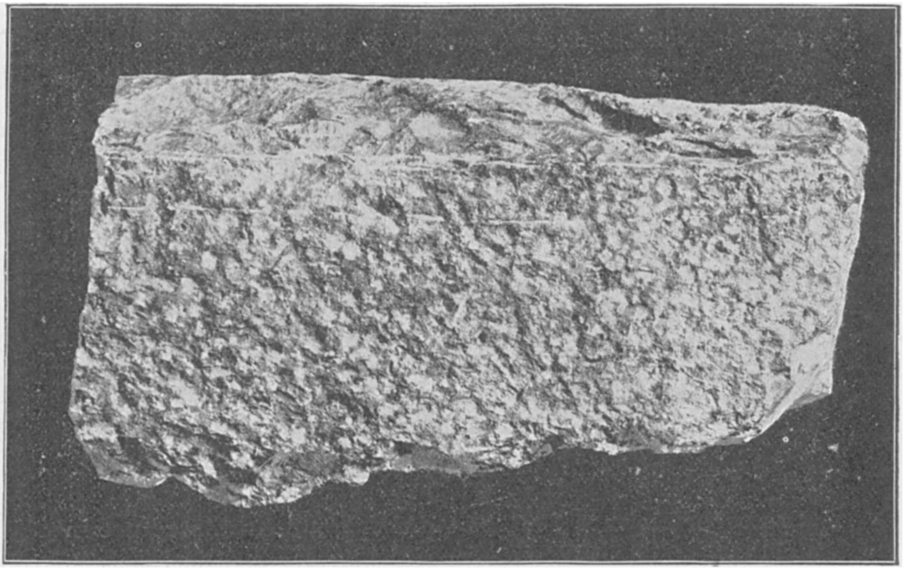

Fig. 1. Fragment of Stone from Chichen Itza, supposed to have been hewn by the ancient masons of Yucatan, the tools used are unknown, but we see the peckings of *a pointed implement* on the dressed side, and the long cuts of *an edged tool* along the upper margin.

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[2] Captain Theobert Maler informed me in Ticul in 1895, that he had seen several such quarries.

PLATE VIII.

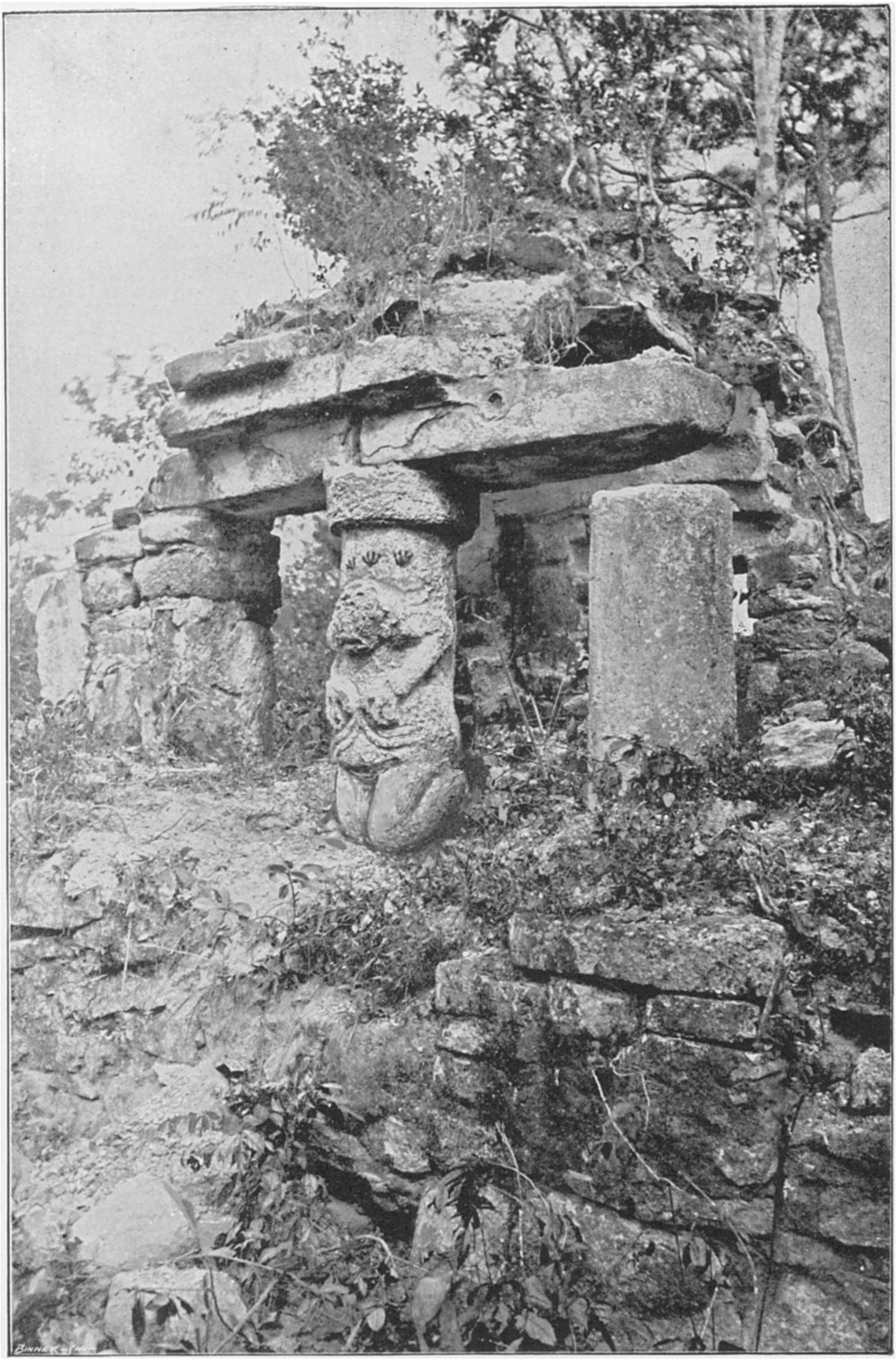


Fig. 4. Miniature portal of a small temple on the Island of Cozumel, a little entrance only 4 feet 6 inches high, to a diminutive building not over 20 feet square by 10 to 12 high resting on a terrace about 5 feet high, of the two round columns supporting the stone lintels, one is carved to represent a kneeling human figure. From a photograph by Mr. E. H. Thompson.

PLATE IX.

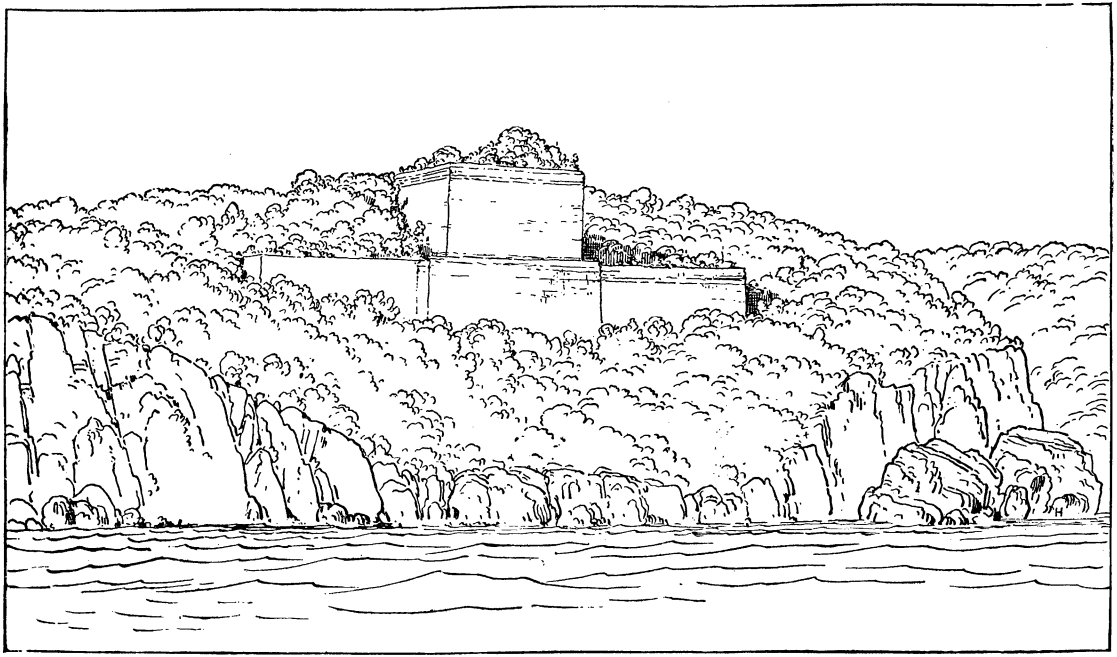
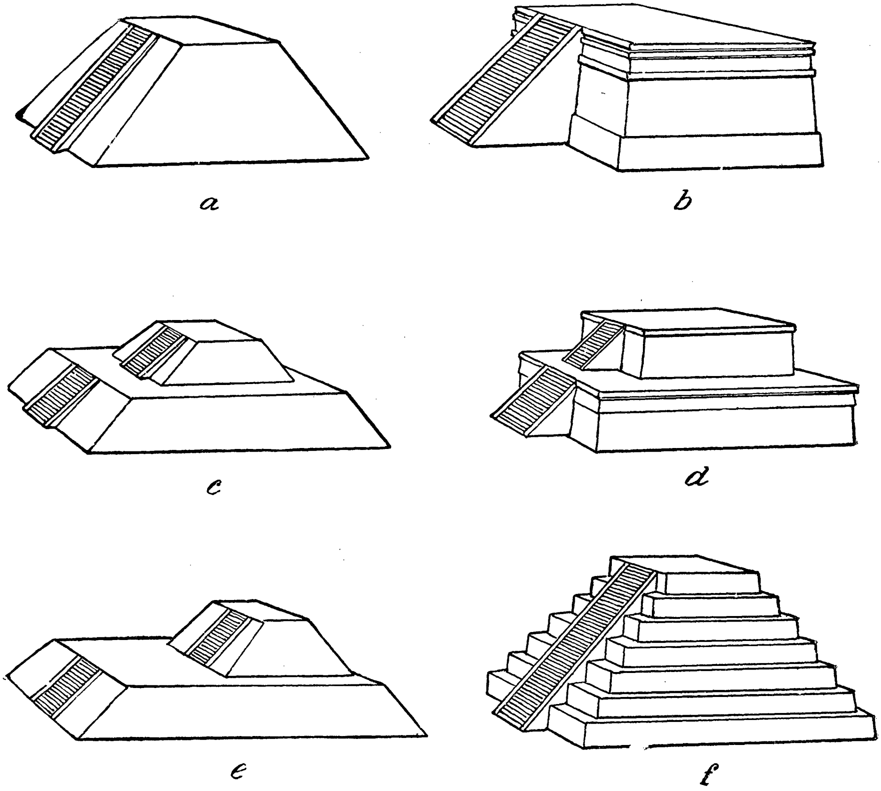


Fig. 5 Ruins of Tuloom as seen from the Sea.
The building fronts inland and its rear walls facing the water are without doors and windows.

facade upon the structure where no long stones project from the pudding like hearting within into the face, to clinch the crust to the mass, the V shape and consequent lack of catch of many of the facing stones, are dwelt upon in order, and a series of sketches disposed to catch the attention and impress the memory, show the varying forms of tumuli, (Fig. 2) the generally rectangular ground plan of buildings, (Fig. 3) and the construction of the arch by the edging in of opposing walls.



Eig. 2. Examples of Terraces and Pyramids, superstructures omitted.

A question of much interest is touched upon when Professor Holmes in the introduction, refers to the geological age of the rock floor of the region in question, since the chance for establishing conclusions in Yucatan as to man's existence in geologically ancient times diminishes according as we learn that the Peninsula was too long under water to count as an early human foothold. My statement (See Hill Caves of Yucatan. Lippincott, Phila., 1895, p. 21) referring to the rocks of Yucatan as of Mesozic Age, is at variance with the recent observations of geologists, while Professor Holmes says on the other hand, (p. 18): "The massive beds of limestone of which the Peninsula is formed contain and are largely made up of the remains of the marine forms of life now flourishing, along the shores. Fossil shells obtained from the rocks in various parts of the country are all of living species and represent late Pliocene or early Plistocene times, thus possibly bringing the date of the elevation of Yucatan down somewhat near that of the reputed sinking of Atlantis, some eleven or twelve thousand years ago, or not far from the period that witnessed the oscillations attending the glacial period." Though true that the peninsular limestone is largely composed of existing marine forms we learn on closer examination that it is not entirely so, and that the shells are not *all* modern. We find that the full list of age denoting fossil mollusca collected from the rocks of Yucatan by the expedition in 1891 of the Academy of Natural Sciences of Philadelphia (See Geol. Researches in Yucatan, by Prof. Angelo Heilprin, Proc. Acad. Nat. Sci. 1891. p. 136) does not characterize the Yucatan rock as of Plistocene Age while the recent researches of geologists (Prof. J. W. Spencer makes the Niagara Gorge 32,000 years old) now tend to add to the antiquity of the Glacial Epoch. Professor Heilprin who conducted the Yucatan

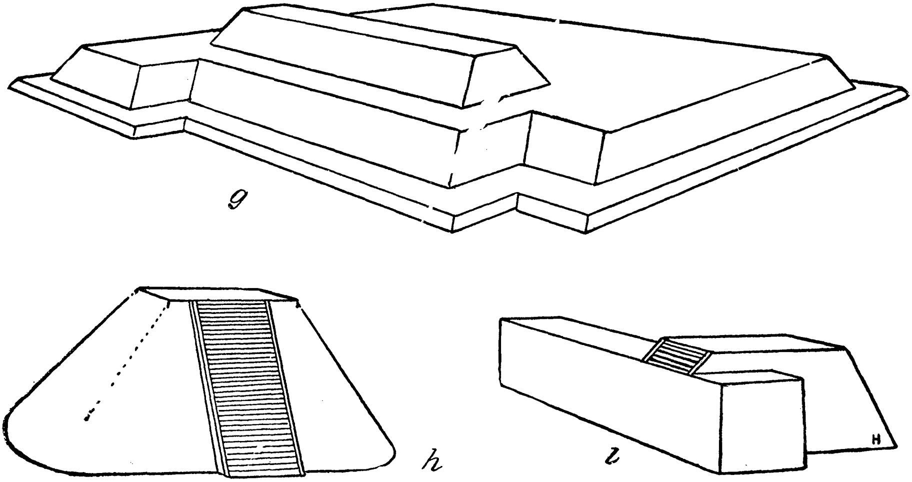


Fig. 2. Examples of Terraces and Pyramids, superstructures omitted.

expedition informs me that "the fossil shells are not *all* recent species since even the level plains about twenty to twenty five miles from the coast contain fossil mollusca (Amusium mortoni, from Cenotes near Merida, Turritella perattenuata and Turritella apicalis from R. R. cut one-half mile east of Tekanto. Ostrea meridionalis and Arca species undetermined, from a digging near Merida and Lucina disciformis) not now known to be living, and which make part of the Floridian formation (the typical Pliocene of the United States). Furthermore in the Sierra which contains the caves, a number of fossil forms have been found the determination of which is rather doubtful, but which may be of early Pliocene or even of Miocene Age." Professor Pilsbry of the Academy of Natural Sciences and Mr. C. W. Johnson of the Wagner Institute say further after examination of the shell bearing rock specimens brought home by the Expedition above mentioned and now in the Academy of Natural Sciences, that "the shells indicate late Pliocene but by no means Plistocene Age, the presence of several characteristic Pliocene species Turritella (2 species) Fulgur rapum. Pecten eboreus Amusium mortonii, and Ostrea meridionalis preventing the possibility of the rocks being assigned to a later Epoch than the Pliocene while the fossils extinct and still existing considered together, indicate that the formation was contemporaneous with the Floridian formation of Prof. Heilprin."

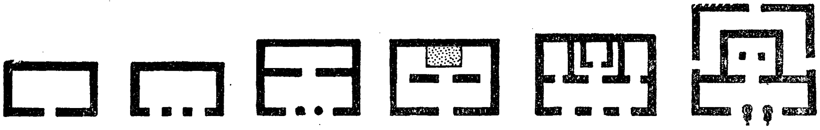


Fig. 3. The various kinds of ground plans used in Maya (ancient Yucatecan) temples.

(*a*) Single chamber building with plain door.

(*b*) Single chamber temple with wide doorway and two square columns.

(*c*) Two chamber temple with wide doorway and round columns and the Sanctuary with single plain doorway.

(*d*) Two chamber temple, the vestibule with simple doorway and the Sanctuary with three doorways and a low altar.

(*e*) Four chamber temple Palenque type, the vestibule with three entrances and two squarish piers, the Sanctuary with tablet chamber, and two small lateral chambers.

(*f*) Three chamber temple, Chichen Itza type, the vestibule entered by wide portel with two serpent columns, this Sanctuary enlarged by introducing two square columns to support the triple vault, and a long gallery with three doorways extending behind.

In the second part of the volume a talent for lucid simplification impresses us in novel panoramic views of Uxmal and Chichen Itza, when stationed upon an imaginary height, we view the arrangement of walls and mounds clear of obscuring masses of leafage and rubbish, add to this something of the ever delightful charm of the landscape painter in sketches illustrating the course of expedition along the east coast, as we follow it from the Isle of women (Mujeres) to Tuloom, and from Cozumel to Cancun and El Meco. Looking from water to land we seem to see the tropical distance taking on its mirage like garb of coolness, and by grotesque pinnacles of rock, hear the rush of green waves upon the sands, where mysterious walls set softly in the deceitful blue allure us from the shore.—HENRY C. MERCER.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Nova Scotian Institute of Science.—May 11, the following papers was read: Notes on the Geology of Newfoundland, by T. C. Weston, Esq., F. G. S. A., Ottawa; Phenological Observations for 1895, by A. H. McKay, Esq., LL. D., F. R. S. C., Superintendent of Education; Glacial Succession in Central Lunenburg, by W. H. Prest, Esq., Chester Basin, N. S.; On the Flora of Newfoundland, No. 3, by Rev. Arthur C. Waghorne, New Harbour, Newfoundland; Notes on Nova Scotian Zoology, No. 4, by Harry Piers, Esq.; Water Supply of the Towns of Nova Scotia—Financial, Sanitary and other Considerations, by W. R. Butler, Esq., M. E., Professor of Mathematics, Natural Philosophy and Engineering, King's College, Windsor; On the Broad Cove Coal Field, by W. H. Ross, Esq., C. E.—HARRY PIERS, *Secretary.*

Boston Society of Natural History.—The Annual Meeting was held Wednesday evening, May 6th. The following business was transacted: Reports of the Curator, Secretary, Librarian, Treasurer and Trustees; Announcement of the award of the Walker Prize for 1896; Election of Officers for 1896-97. The following paper was read: Prof. Charles S. Minot: On the Principles of the Construction of the Microtomes. There was shown a collection of the microtomes illustrating the evolution of the instrument, and also a microtome of a new model.

May 20.—The following papers were read: Prof. E. S. Morse: Man as a Tertiary Mammal; Dr. G. A. Dorsey: On the Photograph and Skeleton of Neddy Larkin, a native of Australia.—SAMUEL HENSHAW, *Secretary.*